The Maryland Fruit Grower

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TRENDS IN NEW APPLE VARIETIES

By A. L. Schrader, Head, Department of Horticulture, University of Maryland, College Park, Md.

In discussing new apple varieties, two questions should be presented and answered, if possible. First, why do we have any new varieties to consider for planting? Second, are the new varieties replacing old varieties? These two questions are of great interest from the standpoint of trends in the planting of new varieties.

In answer to the first question, there have been several new apple varieties introduced in recent years as the result of extensive breeding work by several state agricultural experiment stations. For this work, many years for development and testing of each variety were necessary before any variety was offered as promising for commercial planting. In addition to the breeding work, many red strains recently have been discovered in existing orchards of Delicious, Rome, York, Northern Spy, Jonathan, Baldwin, Gravenstein, Winesap, Stayman and others. New names have been attached to these red strains or "red sports" of old varieties since the red strains do have earlier and better red color than the parent variety, and differ in other respects in some cases. However, for marketing purposes the grower has found it desirable to add the parent name to the new name of several red strains, to acquaint the trade with these new variations of old varieties for more ready acceptance on the markets. Thus, with many new red strains such as Staymared, Blaxtayman, Richared, Blackjon, Blackmac, Red Rome, Gallia Beauty, Yorking and others, together with the breeding work in progress, attempting to produce varieties of better season, quality, yield or other characters, the apple grower is confronted with a number of new varieties. In succeeding years more new varieties will appear and be tried by growers.

With the present list of new varieties, is it to be expected that old varieties will be displaced or that new varieties will fill some gaps in our variety list? This is the second question previously mentioned. Undoubtedly, new varieties will replace old varieties whenever the new variety proves superior, but the process will be gradual as shown by experience in the past. At the present time there are some new varieties that may replace the old in the course of time. But first let us look over the established Maryland varieties as to number of trees in commercial orchards, recorded in 1928 by the U. S. Bureau of Census, as shown in Table 1. In this list, we find Delicious, a comparatively new variety introduced in 1895 which now is one of the leading varieties. Some of the varieties such as Yellow Transparent, Williams, Duchess, Grimes and Winter Banana are losing favor for commercial planting at least for certain sections and new varieties have a good chance to fill in the gaps for these varieties.

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TABLE 1—APPLE TREES, MARYLAND: ESTIMATED NUMBER OF TREES OF THE PRINCIPAL VARIETIES, JANUARY 1, 1928[1]

Variety	Trees of All Ages in Commercial Orchards		Young trees in Commercial Orchards		Percentage of the trees of each variety that are young
	No.	Per cent	No.	Per cent	
Stayman Winesap	307,000	22.0	75,800	19.5	24.7
York	213,900	15.3	47,400	12.2	22.2
Grimes	131,600	9.4	68,000	17.5	51.7
Yellow Transparent	80,900	5.8	32,700	8.4	40.4
Delicious	62,300	4.5	39,800	10.2	63.9
Jonathan	56,100	4.0	12,500	3.2	22.3
Ben Davis	55,400	4.0	600	.2	1.1
Arkansas	53,400	3.8	2,900	.7	5.4
Winesap	39,000	2.8	3,300	.9	8.5
Rome Beauty	31,000	2.2	3,600	.9	11.6
Gano	29,800	2.1	15,300	3.9	51.3
Paragon	21,800	1.6	3,900	1.0	17.9
Oldenburg	21,300	1.5	16,800	4.3	78.9
Stark	16,300	1.2	2,900	.8	17.8
Baldwin	15,300	1.1	400	.1	2.6
Winter Banana	14,900	1.1	10,600	2.7	71.1
Wealthy	13,100	.9	8,600	2.2	65.6
N. W. Greening	12,900	.9	7,300	1.9	56.6
Red Astrachan	9,800	.7	-------	---	---
Golden Delicious	9,100	.6	8,600	2.2	94.5
McIntosh	6,300	.4	4,700	1.2	74.6
Summer Rambo	5,600	.4	1,000	.3	17.9
Gravenstein	5,400	.4	-------	---	---
Other varieties	186,100	13.3	22,300	5.7	12.0
Total	1,398,300	100.0	389,000	100.0	27.8

[1] Taken from "Estimated Numbers of Apple Trees by Varieties and Ages in Commercial and Farm Orchards in Maryland," U. S. D. A., 1930.

For the Yellow Transparent season, there is a promising new variety, called Lodi, introduced by the New York Agricultural Experiment Station at Geneva in 1924. This variety, a cross of Montgomery X Yellow Transparent bears a fruit closely resembling Yellow Transparent in shape and flavor, but attains much larger size. It is ready for commercial market at the same time as Transparent and has equal or better handling and shipping qualities. The Lodi trees growing at College Park, Maryland, are more spreading, more productive, altho also largely biennial as Transparent. Coming into bearing early and with large sized fruits, Lodi offers promise.

For the Williams season, the new varieties are not especially promising. Early McIntosh, introduced in 1924, ripening about 10 days after Transparent, has red color and quality, but lacks size of fruit, largely due to heavy setting of fruits. Melba, a McIntosh seedling from Canada, introduced in 1924, would have great prospects if it were not for its tender handling quality. It bears early and annually, has size, color and quality and may appeal to growers who wish an apple two weeks after Transparent for roadside trade.

In the Duchess season, there is nothing to suggest except some red strains of Duchess which have solid blush of color instead of stripes, but no better quality.

Milton is a variety highly recommended in the north for the Wealthy season, but up to date, the fruits are irregular in shape under Maryland

conditions, as also reported in New Jersey. This variety was introduced in 1923, as Yellow Transparent X McIntosh cross, which resulted in a fruit of high color, good quality and white flesh which is well received commercially on markets in New York and New England.

Considering McIntosh season, the variety Cortland has found a place in the north as a fruit of quality, large size and good color which hangs better than McIntosh and keeps better. Introduced in 1915, it has been slow in getting its merits established for more southern conditions but appears promising. Probably more promising is the Kendall, a McIntosh X Zusoff cross, introduced in New York in 1932, which, of course, needs testing under our conditions before recommendations can be made. Under New York conditions, it develops high color and quality, bears annually and hangs well on the tree. Some other new varieties ripening during the McIntosh and Wealthy seasons which have not been sufficiently tested under Maryland conditions for definite comment include Joyce, McEarly, Carlton, Pedro and Red Sauce.

Ripening during the Northwestern Greening season, Lobo offers promise to supply a large, well-colored apple. More information is needed on this variety.

There is a lot of interest being shown, especially in Ohio and Indiana, in the variety, Turley, which has been termed the Stayman that does not crack. It is a Winesap seedling found in Ohio which produces fruits similar to Stayman but more highly colored. It does not develop the flavor and quality of Stayman, nevertheless a large, good quality fruit is Turley with a longer storage season than Stayman. It is a variety worth trying in Maryland. Some six-year old trees at College Park show a strong development with spreading branches, starting to fruit this past season.

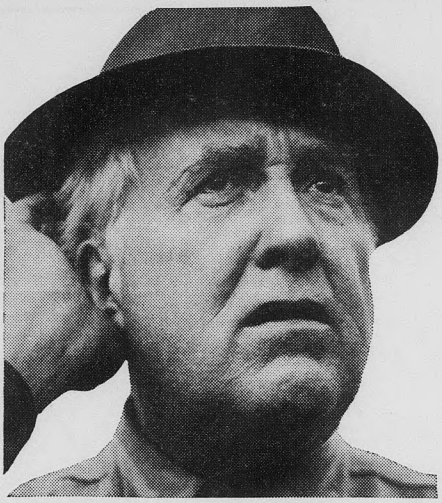
Among the most interesting of the new developments in apple varieties are the numerous red strains of the old varieties which develop earlier and higher color than the parent source. Before the complete story can be told about these red strains, more information must be obtained as to keeping quality, size of fruit, ripening dates, etc. However, many plantings of these new strains have been made, as indicated by a small survey in Maryland in 1936 among a part of the growers. Table 2.

TABLE 2—SURVEY OF APPLE VARIETIES IN MARYLAND, 1936[1]

Variety	Growers Reporting (70 growers were interviewed)		Trees	
	No.	Per cent of Total	No.	Per cent
Blackjon	1	2	25	.4
Blaxtayman	1	2	200	2.9
Cortland	6	12	220	3.2
Golden Delicious	23	46	3,553	52.1
Gallia Beauty	2	4	60	.9
Lowry	3	6	50	.7
Red Rome	5	10	830	12.2
Richared	1	2	250	3.7
Starking	6	12	1,230	18.0
Staymared	2	4	400	5.9
Total	50	71	6,818	100.0

[1] Survey conducted by Dept. of Horticulture, Univ. of Maryland.

Among the better-known red strains, the grower has his choice as follows:
Delicious red strains—Starking, Richared and Shotwell Delicious.
Rome Beauty red strains—Gallia Beauty and Red Rome.



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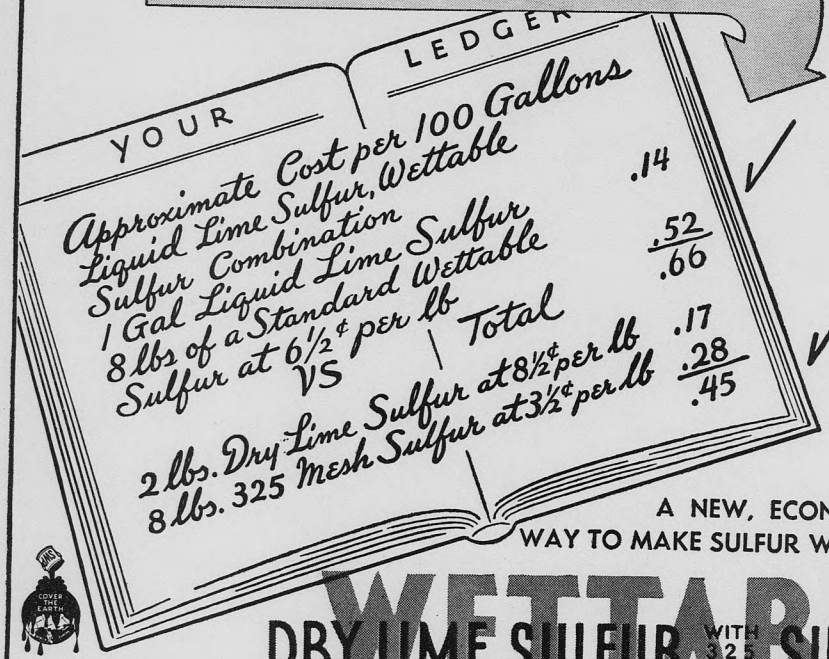
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Stayman red strains—Staymared and Blaxtayman.
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Jonathan red strains—Blackjon and Jonared.

There are some differences among the red strains of a given parent variety, which may be of commercial importance as orchards mature, and future comparisons may show which of the red strains are the more desirable.

This brief sketch of the apple variety question only serves to emphasize that recent years have brought many new names and faces in the apple variety list from which to select the relatively few commercial sorts, adapted to our climates and markets, and filling out the season for the commercial orchard. Several new varieties and red strains have not been mentioned, but which may prove of importance in later years.

BULLETIN REVIEW

APPLES—Yields, Prices, Returns Per Acre, and Trend in Plantings of Important Varieties Grown in Selected Districts of the East
(Virginia, West Virginia, Maryland, Pennsylvania, and Delaware)

The data contained in this four-year study are of particular interest to Maryland fruit growers since the main purpose as indicated by the title was to determine the yield, prices and gross financial returns per acre for each variety of major importance in the commercial apple producing districts of the Shenandoah-Cumberland Valley of Maryland, Virginia, West Virginia and Pennsylvania, the Piedmont and Roanoke areas in Virginia, and in Delaware.

There were 473 farms included in this survey. The averaged size of these farms was 288 acres of which an average of 77 acres were in apple orchard. Altogether there was a total of 1,480,880 trees on the farms comprising this study.

Trees of the 12 leading varieties in these districts constituted 86.7% of all the trees reported. York Imperial constituted 26.6% of all trees, Stayman 14.9% Winesap 10.3%, Delicious 7.8%, Grimes 4.9%, Y. Transparent 4.3%, Jonathan 3.7%, Arkansas 3.5%, Newtown 3.4%, Ben Davis 3.2%, Rome 2.2% and Williams 1.8%. The remaining 13.3% included more than 100 varieties.

The average yield per acre of these 12 varieties for each of four different age groups is given in the following table. These yields represent 4-year averages, 1931-34 inclusive, all districts being included.

VARIETY	Ave. Bu. Yield Per Acre of Trees in Different Age Groups (Yrs.)			
	10-14	15-24	25-34	Over 35
York	72.1	165.2	156.6	139.1
Stayman	77.3	127.5	105.0	110.4
Winesap	32.0	99.9	72.6	49.1
Delicious	80.2	91.5	53.5	.....
Grimes	69.2	128.8	126.9	44.4
Y. Transparent	72.7	86.8	87.3	.....
Jonathan	67.8	105.0	79.9	46.2
Arkansas	88.9	163.2	127.4	123.0
Ben Davis	75.0	105.8	138.7	113.2
Williams	111.4	120.0	65.3	.....
Y. Newton*	.....	68.1	83.5	73.4

*Y. Newton 45-54 yrs. 114.4; over 55 yrs. 21.8 bu.

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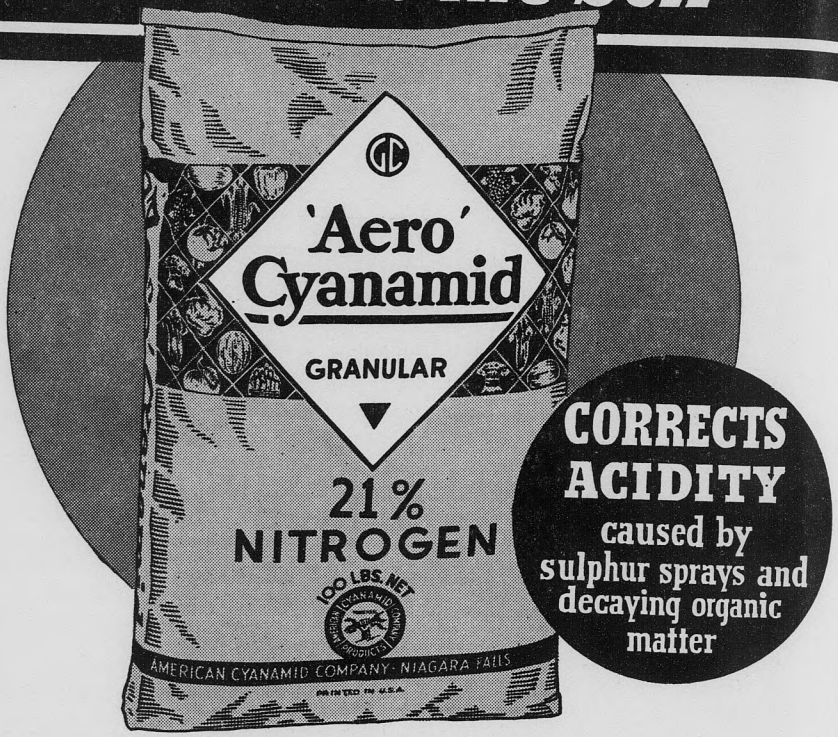

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It is of interest to note from these figures that the peak production of these different age groups fell in the 15-24 year old period for all varieties excepting Ben Davis and Yellow Newtown. Furthermore, the figures show that the decline in yield of trees past 25 years of age was much more rapid with Grimes, Jonathan, Williams, Delicious and Winesap than it was with York, Stayman, Arkansas, Ben Davis and Yellow Newtown.

The total number of apple trees in Maryland for each of the 15 most important varieties is given in the next table. The percentage of the total trees of each variety falling into various age classes based on 5-year periods is also given.

Variety	Total trees	Less than 5 years old	5-9 years old	10-14 years old	15-19 years old	20-24 years old	25-29 years old	30-34 years old	35-39 years old	40-44 years old
	Number	%	%	%	%	%	%	%	%	%
York Imperial	34,391	7.9	3.4	11.5	11.0	15.4	22.9	19.9	7.7	0.3
Stayman Winesap	12,594	6.9	2.0	25.8	30.1	23.8	11.2	.2	----	----
Grimes Golden	11,734	.8	3.4	42.4	12.6	19.2	13.8	4.4	1.3	2.1
Delicious	9,556	11.7	14.4	25.7	23.8	10.7	10.4	3.3	----	----
Yellow Transparent	7,580	----	.1	40.5	34.2	15.7	1.8	7.7	----	----
Oldenburg	7,263	.5	5.4	38.2	17.0	19.5	8.8	10.6	----	----
Jonathan	4,996	2.9	5.1	.8	2.1	32.4	42.2	14.5	----	----
Rome Beauty	4,444	8.0	40.0	----	----	25.5	5.5	15.4	----	5.6
Ben Davis	2,684	----	3.0	----	----	43.9	18.6	34.5	----	----
Arkansas	2,628	1.2	1.5	----	13.8	16.6	30.2	24.7	12.0	----
Gano	2,083	2.7	2.4	24.0	48.8	1.7	19.2	----	1.2	----
Wealthy	2,075					30.4	26.4	1.0	----	----
Summer Rambo	1,609	----	9.7	32.5	----					
			.5	43.5	5.9	----	12.1	38.0	----	----
Baldwin	1,136	----	----	----	.2	.1	63.6	----	----	36.1
Stark	1,081	----	----	----	----	4.6	10.6	62.0	21.9	----

A study of these figures reveals that the largest single percentage of Maryland's, York, Jonathan, Arkansas and Baldwin are in the 25-29 year age class. With Stayman and Gano the largest single percentage is found in 15-19 year old class; with Grimes, Delicious, Transparent, Duchess, Wealthy and Rambo a larger percentage of the trees fall into the 10-14 year age class than in any other class. Only in the case of Rome does the highest percentage of trees fall into the 5-9 year old class and only in the case of Stark does it fall in trees over 30 years of age.

With almost 50% of our Rome trees under 10 years of age and slightly over 50% of our Delicious trees under 15 years it would appear that the production of these two varieties will materially increase during the next few years. Likewise with Grimes and Stayman, for nearly 50% of the Grimes and over one-third of the Stayman trees are under 15 years of age.

On the other hand only 11% of the Jonathan trees, 16% of the Arkansas, 3% of the Ben Davis and less than 3% of the Stark trees are under 20 years of age.—*Abstracted by Dr. I. C. Haut.*

For Sale—"Friend" 300-gallon tractor sprayer. Good condition. Used one season, and now located on an orchard at Hancock, Maryland. Has been replaced by stationary spray system. For full particulars write Locher & Company, Farm Department, Glasgow, Virginia.

COLD STORAGE HOLDINGS

The Bureau of Agricultural Economics reported 174,000 barrels of apples in storage on February 1, compared to 233,000 barrels on January 1, and 637,000 barrels on February 1, 1936. There were 9,205,000 Western boxes in storage on February 1, 1937, a two million box decrease under January 1, 1937, and over two million boxes less than February 1, 1936. Eastern baskets, crates and boxes (7,623,000) showed slightly over two million bushels decline under January 1, 1937, and about the same decline under bushels in storage on February 1, 1936.

SPRAY RESIDUE TOLERANCE

In a letter dated January 28th, Secretary Wallace stated that the lead tolerance for 1937 will be 0.018 grains per pound of fruit, and arsenic and fluorine tolerance will be 0.01 grains per pound of fruit. These are the same tolerances as of last year.

SIDE REMARKS

The fiscal year of the Society ends December 31st. That means that annual membership dues are in order in January. So far, we have a goodly number of paid-up members for 1937. The dues are really small, but of great help in keeping the Society activities going. The Secretary cannot see every member individually, so this is a request, or even a plea to all members to send in that dollar right now, before you forget it. Send cash, check, or money order to A. F. Vierheller, College Park, Md. Thank you.

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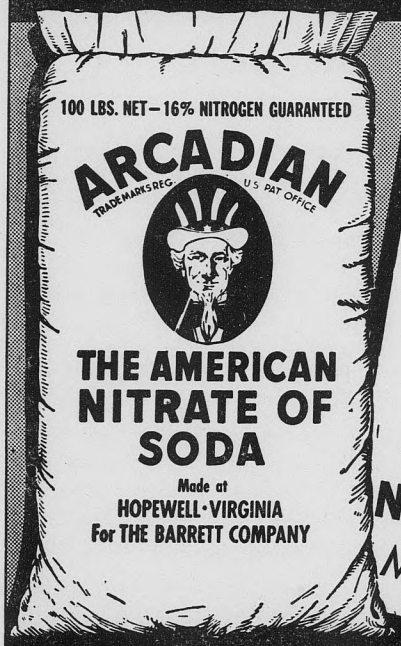

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